

REMARKS

Claims 71-85 are currently pending in the present application and all of the claims were rejected in a USPTO Office Action having a mailing date of December 27, 2007. This Amendment and Response comprises the Applicant's reply to the above-noted Office Action. Applicant notes to the Examiner's attention that this Amendment and Response has been submitted with a Request for Continued Examination. Accordingly, reconsideration of the pending claims in view of the following discussion is respectfully requested.

35 U.S.C. §103(a) Rejection of Claims 71-73, 77 and 78

Claims 71-73, 77 and 78 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,007,709 to Duyvesteyn ("Duyvesteyn") in view of U.S. Patent No. 5,143,598 to Graham, et al. ("Graham"). On page 3 of the Office Action, the Examiner has stated "[i]t would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Duyvesteyn to include where the solvent recovery step is performed before the gravitational separation because according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results (see MPEP 2144.04 IV.C.)." The Applicant respectfully traverses this rejection and the foregoing assertion.

The cited references fail to teach or suggest at least the following italicized features of independent claim 71:

71. A process for treating a diluted tailings component, comprising heated water, particulate mineral solids and residual bitumen and solvent, said component having been derived from bitumen froth by dilution and mixing of the bitumen froth with solvent and separation of the resulting diluted bitumen froth into a diluted bitumen component and said diluted tailings component, comprising:

first subjecting the *diluted tailings component* to a solvent recovery separation to recover *substantially all* of the solvent in the diluted tailings component as a separate recovered solvent component and produce a solvent recovered tailings component containing water and solids and *residual* bitumen and solvent; and

second subjecting the *solvent recovered tailings component* to gravity separation to separately produce an overflow stream of clarified heated water and an underflow stream mainly comprising solids and water.

Duyvesteyn is directed to a process for the extraction of bitumen from bitumen froth generated from tar sands. In the Duyvesteyn process, bitumen froth is extracted from tar sands using a water process. It is then treated in a counter-current decantation circuit with a paraffinic solvent to remove precipitated asphaltenes, water, and solids from the bitumen froth. The process produces a dilute bitumen product having final water and solids content of about 0.01 to about 1.00% by weight rendering the dilute bitumen product amenable to direct hydrocracking.

As the Examiner has acknowledged, Duyvesteyn does not teach previously subjecting the bitumen froth tailings, fed to gravity separation, to solvent recovery because the bitumen is scrubbed from the secondary settler underflow. The source of water recycle 4 is as an underflow from the primary and secondary gravity separations 30 and 37. Solvent recovery is practiced only at the end of the process on a solvent/precipitated asphaltenes phase 39. In contrast, the present invention separates the solvent from the tailings and water before gravity separation to provide, surprisingly and unexpectedly, a higher degree of water recovery.

To overcome the deficiencies, the Examiner relies on U.S. 5,143,598 to Graham, et al. ("Graham"). Graham is directed to methods for the recovery of bitumen from tar sands comprising the steps of mixing tar sand, solvent and a displacing amount of aqueous medium to form a mixture, followed by separating a bitumen-rich solvent phase from the mixture and recovering bitumen from the bitumen-rich solvent phase. This reference appears to teach solvent recovery before water recovery from an aqueous mineral phase 26 comprising the mineral component contained in an aqueous medium and a residual amount of solvent. At col. 11, line 59 to col. 12, line 19, the solvent is stripped by steam to produce a clean mineral and water slurry from the column bottom. This stream 34 is fed to a water recovery zone 36. Water recovery is performed by gravity separation techniques.

The Applicant respectfully notes that *In re Burhans* does not state that "the selection of any order of performing process steps in prima facie obvious." Rather, *In re Burhans* states "[t]here is no merit in the point here in the absence of any proof in the record that the order of performing the steps produces any new and unexpected results." *In re Burhans*, 154 F.2d 690, 692 (CCPA 1946). In the matter of the present application, there is support for a finding of non-obviousness because if the solvent is removed as a step prior to gravity separation, then there would be no very dilute bitumen 31 to be recycled back to the primary mixer 13. Indeed, it

would be necessary to replace the stream with fresh solvent, and the bitumen that would normally be recycled back to the mixer would be lost to tailings.

Moreover, it shows that one of ordinary skill in the art would not consider modifying Duyvesteyn to reverse the steps of gravity separation and solvent recovery as this reversal would render the Duyvesteyn process uneconomical. The dilute bitumen 31 would be lost to tailings, requiring more expensive, fresh solvent to be added to the system. Fresh solvent would be added, for example, to maintain a desired 2:1 solvent/bitumen step in the primary mixer stage. Stated another way, Duyvesteyn actually teaches away from practicing solvent recovery before gravity separation.

This addresses the Examiner's contention that it would have been obvious "to modify the process of Duyvesteyn to include where the solvent recovery step is performed before the gravitational separation."

Accordingly, the Examiner is respectfully requested to withdraw the 35 U.S.C. §103(a) rejection of Claims 71-73, 77 and 78.

Having overcome the rejection, if the Examiner persists with the existing rejection, the Applicant respectfully requests that the Examiner provide an affidavit in accordance with 37 CFR §1.104(d)(2). Such section requires that when a rejection in an application is based upon facts within the personal knowledge of the Examiner, the data relied upon should be as specific as possible, and the reference must be supported, when called for by the Applicant, by the affidavit of the Examiner, such affidavit to be subject to contradiction or explanation by affidavits of the Applicant or other persons. As such, Applicants also respectfully request the opportunity to respond to any such affidavit of the Examiner, if one is submitted. Thus, an Examiner Affidavit is requested if the Examiner persists in asserting that "[i]t would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Duyvesteyn to include where the solvent recovery step is performed before the gravitational separation."

If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP §2143.03. Having addressed the 35 U.S.C. §103 rejection of independent Claim 71, the Applicant respectfully requests the Examiner also withdraw the rejection of its dependent claims, namely, Claims 72-85.

35 U.S.C. §103(a) Rejection of Claims 74-75, 79, 80, 84, and 85

Claims 74-75, 79, 80, 84, and 85 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,007,709 to Duyvesteyn (“Duyvesteyn”) in view of U.S. Patent No. 4,368,112 to Thompson (“Thompson”). The Applicant respectfully traverses this rejection.

First, the Applicant respectfully notes that Thompson not only has nothing to do with bitumen recovery, but also fails to overcome the deficiency of conducting the solvent recovery step before the gravitational separation. Thompson is directed to a warm-up deoiling process for lube oil slack wax.

Second, Thompson provides no motivation to one of ordinary skill in the art to remove the solvent *before* gravity separation. To the contrary, Thompson teaches removal of wax particles *before* solvent recovery. With reference to Fig. 2, the solvent-containing slack wax stream in line 10 is mixed with permeate solvent from line 24. Heat exchanger 30 heats and dissolves the foots oil, but not the wax, to produce a slurry comprising particles of wax and dissolved foots oil. The slurry is passed through a filter 14, in the form of a rotary drum, to remove the wax particles from the foots oil. The foots oil and solvent liquid phase are then passed through a membrane unit 22.

Finally, Thompson provides no incentive to one of ordinary skill in the art to modify Duyvestyn to realize the claimed invention. For the reasons stated above, one of ordinary skill in the art would not consider reversing the steps of Duyvestyn as this would render the Duyvestyn process less economically viable. Thompson, as noted, teaches away from such a reversal of steps.

Accordingly, the pending claims are allowable.

The dependent claims provide further reasons for allowance.

Based on the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: April 15, 2008

By: 

Douglas W. Swartz
Reg. No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700